

1771A R G U L I S , C. 177.

131-12-5/9

AUTHORS: Margulis, O.M., Gin'yar, Ye.A.
TITLE: The Wear of Refractories in Various Zones of the Blast Furnace
(Iznos ogneuporov v razlichnykh zonakh domennoy pechi)
PERIODICAL: Ogneupory, 1957, Nr 12, pp. 549-556 (USSR)
ABSTRACT: Data concerning the investigation of used refractories of 5 blast furnaces are given and explained, and the blast furnaces, their lining, and their working conditions are described in detail. Table 1 shows the wear of the upper part of the shaft, which is mainly of mechanical origin. (Friction of the hard charge and damage caused by parts of the charge being driven against the wall of the shaft). In the lower part of the blast furnace, where the temperature is comparatively high, chemical interactions between the lining and the alkalis and alkaline earth oxides predominate. The depth of alkali action in the bricks amounts to up to 50-60 mm, and in some cases to even more than 100 mm, which entails a decrease of refractoriness (table 2). Tables 3 and 4 show the various zones of bricks, which differ as to composition and properties. The illustration shows the horn profiles and bottoms of blast furnaces Nr 3 and Nr 4, which are described and explained in detail. Table 5

Card 1/2

MARGULIS O.M.

Dist.: 4E3d 17
Immersion Thermoconic Sheaths. O. M. Margulis, K. G.
Romanchenko, and A. A. Ust'man. (Sov. 1957, (8), 714-715).
Ceramic sheaths were found to crack at the liquid metal-air
interface. A new type for immersion for up to 4 h is described
based on ZrO_2 stabilized with CaO and magnesite.

USSR/Chemical Technology. Chemical Products and their Application.
Glass. Ceramics. Building Materials.

J-12

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27696

69.55, Fe_2O_3 - 2,46; resistance to fire - 1770° ; interplanar distance of the (610) plane - 1.889 Å (same in the acicular M - 1.866 Å). It seems that the conditions of work are the cause of the formation of isometrical M, viz.: loosening of M at sharp temperature changes, penetration of iron dust into its lattice and work of the refractory material at a comparatively low temperature, which retards the growth of crystals.

Card : 2/2

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Margulis O.M.

USSR/Chemical Technology. Chemical Products and their Application.
Glass. Ceramics. Building Materials.

J-12

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27696

Author : L.I. Karyakin, O.M. Margulis.

Inst : Academy of Sciences of USSR. - All. Sci. Res. Inst Refractories, Khar'kov
Title : Formation of Mullite in Unusual Shape.

Orig Pub: Dokl. AN SSSR, 1956, 109, No 4, 821-823.

Abstract: Mullite (M) in isometrical grains 1 to 15 μ large and sometimes in the shape of short prismatic crystals was detected in unburnt bricks made of Polog kaolin (100%) that had served 1.5 years in covers of soaking pits at temperatures from 1400 to 1450°. The amount of the isometrical M is as follows (in %): in the transition zone of bricks - 15 to 20, in the working zone - 50 to 55, in the scorified crust - 35 to 40. The chemical composition of the residue (of mullite) after the dissolution of the working zone in HF was as follows (in % by weight): SiO₂ - 28.07, Al₂O₃ -

Card : 1/2

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Margulis, O.M.

6
1 - RG
1 - EMK
1 - PM

- ✓ 854. The use of the method of "tagged" inlets to study the influence of refractories on the contamination of steel by non-metallic inclusions. O. M. MARGULIS and A. G. KARALOV (Ogneupory, 21, 233, 1956). In Russian. In plant tests Ca⁴⁴ was introduced into the briquettes from which the grog was made and into the bond. To ensure uniform distribution of the very small quantity (0.001%) introduced into the bond, Ca⁴⁴ was added as an aqueous solution of Ca⁴⁴Cl₂. The investigation threw no light on the influence of various types of refractories on the contamination of steel. The average proportion of non-metallic contamination due to the casting-pit accessories is only about 0.13% and is similar in amount for different types of refractory. The ladle refractories affect the amount of impurities in steel; although their maximum contribution amounts to only 4.6% (for firebrick linings), the effect on purity of steel is considerable because the brick inclusions are large. (1 fig, 2 tables.)

PM EMK

Ath Sci Rev Inst Refactories

PG

M A R G U L I S / O M
N-2 Methods of introducing the radio-active indicator Ca^{45} into refractory mixes
2026. Method of introducing the radio-active indicator Ca^{45} into refractory mixes
E. V. LAVENTOVICH, A. N. LYUL'KIN, O. M. MAROULIS, and D. M. SHAKHTIN (Ognev-
nost', 21, 73, 1956). In Russian. The simplest method is to add the tracer to the
mixing water. Radioactive Ca^{45} was introduced as Ca oxide of low solubility into
various plastic and semi-dry mixes (silica, magnetite, fireclay, kaolin-fireclay, and
high-alumina). Ca^{45} gives soft β -radiation (requiring less stringent safety measures)
and has a half-life period of 150-180 days, which makes possible the study of processes
taking place over long periods. Distribution curves of Ca^{45} (introduced as CaCO_3
and Ca(OH)_2 powders) in dried silica bricks are given. (3 figs.)

PM
MT
PM 8

Xhar'kov Inst. Refactories

MARGULIS, O. M.

Unfired kaolinite brick. O. M. Margulis, L. A. Gint'yar,
and S. V. Lyashchenko. *Metallurg* 1956, No. 10, 26-0.—
Unfired kaolinite brick contg. 85% coarse-fireredy grog and
15% kaolinite had the following properties: max. service
temp. 1750°; temp. of initial deformation under 2-kg.
load 1420-40°; shrinkage at 1300° 0.01%; at 1450° 0.1-
8%; compressive strength 150 kg./sq. cm.; and porosity 12-
14%. V. N. Budnarski

3

SOV/137-58-9-18680

The Effect of Pouring-pit Refractory Upon the Contamination of Steel (cont.)

standard Borovichi fireclay brick showed the highest oxides inclusions in average points (1.82-1.80 average oxides content according to the point system). The lowest oxide-point rating (1.58) is found for heats poured from ladles lined with high-alumina brick. Heats poured from ladles lined with kaolin brick are characterized by a medium point rating (1.62) for oxides. According to radiometric measurements, the share of ladle refractories in the nonmetallic inclusions found in steels is 4.6% when fireclay brick lining is used, 2.7% with kaolin, and 1.5% with high-alumina brick. Observations of fireclay brick life show a belt of erosion at each point where the slag surface comes to rest after each stool is filled. With kaolin lining no such belts exist, while with high-alumina lining a ring of adherent slag forms at each such point after the filling of the stools. A significant wear of runner-lining refractories is observed - greatest in the case of fireclay refractory (6.4 mm per hour of hot work) and smallest in the case of kaolin refractory (2.3 mm). The influence of runner-lining refractory upon the point rating of oxide contamination of the metal could not be established. Radiometric measurements showed the participation of runner refractories in the contamination of steels with nonmetallic inclusions to fluctuate from 0 to 0.9%.

1. Steel--Impurities 2. Refractory materials--Effectiveness
Card 2/2 3. Dippers--Applications

V.M.

SOV/137-58-9-18680

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 76 (USSR)

AUTHOR: Margulis, O.M.

TITLE: The Effect of Pouring-pit Refractory Upon the Contamination of Steel by Nonmetallic Inclusions (Vliyaniye stalerazlivoch-nogo pripasa na zagryazneniye stali nemetallicheskimi vklyucheniyma)

PERIODICAL: Byul. nauchno-tekh. inform. Vses. n.-i. in-t ogneuporov, 1956, Nr 1, pp 71-75

ABSTRACT: A study was made of the effect of refractories on the contamination of ball-bearing steel with nonmetallic inclusions. Introduction of Ca⁴⁵ (as Ca⁴⁵Cl₂) into the refractory was used to make separate determination of the share of runner, ladle, and spout refractories in steel contamination. 150 millicuries of Ca⁴⁵ per t of refractory was introduced into the briquetting mass in the manufacture of firebrick and into the binder clay for bulk refractory. It is established that the maximum wear per hour of hot work is 11 mm for fireclay brick, 4.4 mm for kaolin, and 3.6 mm for high-alumina brick. Heats of steels poured from ladles lined with experimental firebrick and with

Card 1/2

MARGULIS, O.M., kand.tekhn.nauk

Unburned kaolin refractories. Ogneupory 19 no.5:207-211 '54.
(MIRA 11:8)

I.Khar'kovskiy institut ogneuporov.
(Refractory materials) (Kaolin)

MARGULIS, O.M., kand.tekhn.nauk; GIN'YAR, Ye.A., inzh.

Diaspore refractories with high heat resistance and volume
stability. Ogneupory 19 no.2:73-78 '54. (MIRA 11:8)

I.Khar'kovskiy institut ogneuporov.
(Refractory materials) (Diaspore)

Dec 52

MARGULIS, O. M.

USSR/Metallurgy - Zinc Refining, Furnaces

"Seamless Lining of Induction Furnaces for Zinc Refining," O. M. Margulis, Cand Tech Sci,

Khar'kov Inst of Refractories

Ogneupory, No. 12, pp 563-565

Discusses expts for finding optimum compn of lining mixt which was established as follows: 70% kaolin grog with water absorption less than 5%, 20% fire clay, and 10% kaolin. Lining made of this material is still serving in induction furnace after 1½ years of steady operation.

267T71

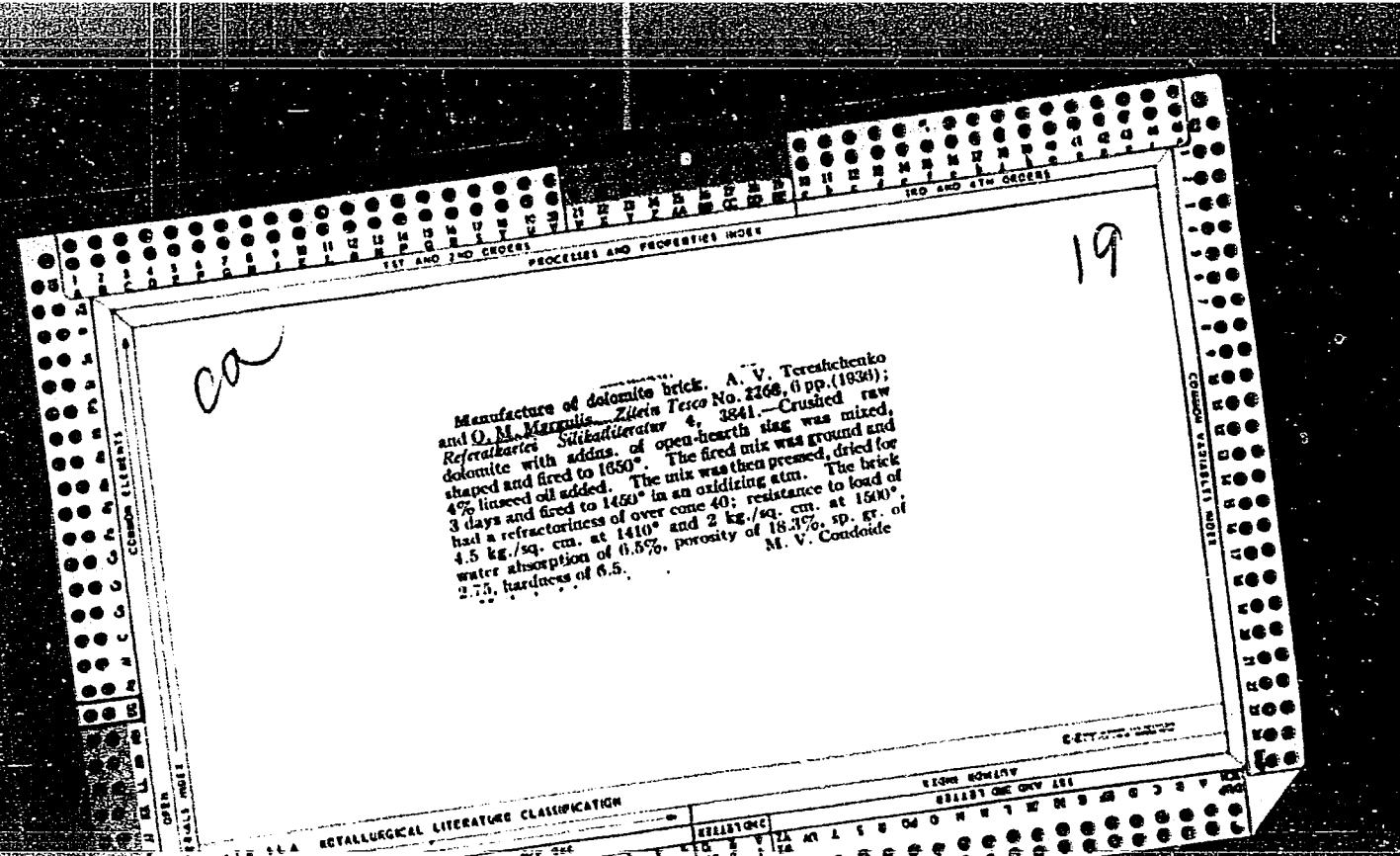
L. I. Karyskin and O. M. Margulie. The outer gas-washed surfaces of recuperators of continuous furnaces. The outer gas-washed surfaces of recuperators of continuous furnaces. 16[4] 152-56 (1951).
to 1150° in a neutral or a weakly reducing medium became sprinkled with
icicles. On tubes having an original composition of carborundum 80,
quartz 2, and vitreous substance 18%, the icicles consisted of carborundum 80,
fayalite, magnetite, and vitreous substance. On tubes having an original
composition of carborundum 75, quartz 2, and vitreous substance 23%, the
icicles consisted mostly of vitreous substance and some carborundum. The
formations are explained by processes occurring during service.

B. Z. E.

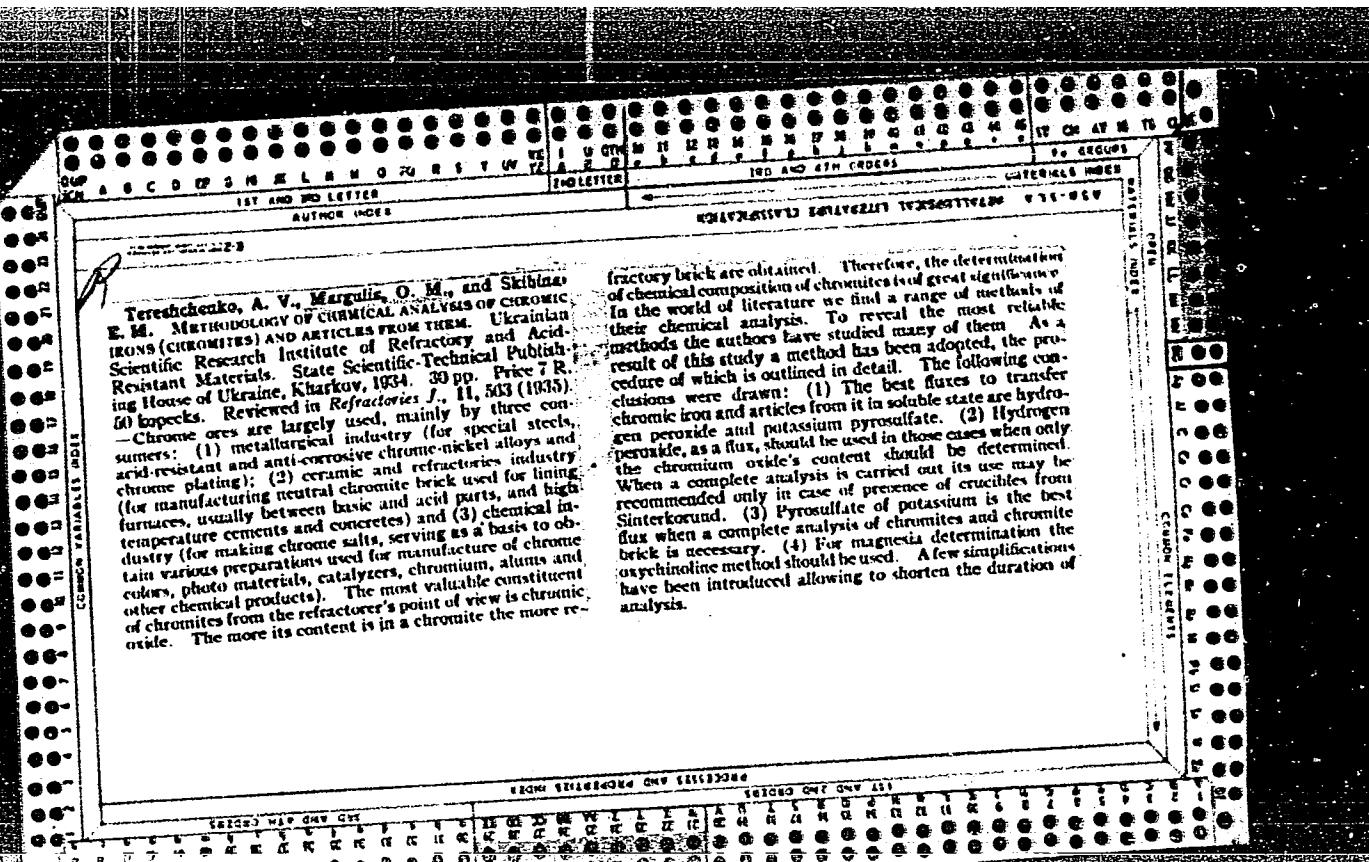
Khar'kov Inst. Refractories

Tereshchenko, A. V., and Margulis, O. M. TALC-MAGNESITE REFRactories. Ukrainskii Nauchno-Issledovatel'nyi Ogneupory & Kishlochnopornoi No. 44, pp. 118-20 (1938).—The mineralogical composition of talc-magnesite brick is forsterite ($2\text{MgO}\cdot\text{SiO}_3$) 45%, spinel ($\text{MgO}\cdot\text{Al}_2\text{O}_3$) 5%, periclase (MgO) 5%, and hematite and magnesite 5%. The properties are as follows: refractoriness 1780°C, mechanical strength 200 to 250 kg./sq. cm., incipient deformation under load 1550°C, and porosity 22 to 28%. The brick is resistant to basic and Fe slag.

Refractory brick from dolomite. A. B. Tereshchenko
and O. M. Strelkina. Uralm. Nauch.-Issledovatel. Inst.
Temperat. Kustoluparov 44, 44 51 (1938). - It is possible
to produce dolomite refractories contg. no free CaO. MgO
is present in the form of periclase, and CaO is combined
into $3\text{CaO} \cdot \text{MgO}$, a small amt. of Ca ferrite and about
2% $2\text{CaO} \cdot \text{SiO}_2$. The last does not change into the
form on cooling and has no effect. The best results were
obtained from a mix contg. 57.1% Nikotovskil dolomite,
7.0% Martens slag, and 3.9% Chasov Yar sand. The
shaped samples were fired to 1650° . The brick has
refractoriness over 1920° , incipient deformation under
load at 1400° , end of deformation under load at 1550° ,
mech. strength 150 kg./sq. cm., sp. gr. 3.341. M. V. Condolle.



R
Terechchenko, A. V., and Margolin, O. M. ~~REFRAZ-~~
~~TORIES FOR CERAMIC FURNACES~~ (1985). The most appropriate refractory for the zone of
fusion is semiacid quartz-grog brick made from 40% sand
or quartz residue from the washing of kaolin, 20% grog
from binding clay, and 40% refractory clay fired at cone 13
(1380°C.). The run of the furnace improves on account
of the decreased amount of slag formed. Silica brick are
used, but with less success. The usual grog brick can be
in the latter does not influence its endurance positively.
Mortar for semiacid brick must be made of 70% clean sand
and 30% plastic refractory clay.



MARGULIS, N.Yu.

Cause of death in tuberculosis patients. Trudy T-10 63.
153-160 '63.
(MERA 17,9)

1. Kafedra tuberkuleza TSentral'nogo instituta usovershen.
stvovaniya vrachey.

GUR'YEVA, I.G., kand.med.nauk; MARGULIS, N.Yu., mladshiy nauchnyy sotrudnik

Conference of the Moscow Tuberculosis Research Institute of the
Ministry of Health of the R.S.F.S.R. on problems in tubercular
meningitis. Probl.tub. 37 no.6:113-116 '59. (MIRA 13:2)
(MENINGES--TUBERCULOSIS)

17(2)

SOV/25-59-7-48/53

AUTHOR: Margulis, N.Yu., Scientific Worker

TITLE: Pleurisy

PERIODICAL: Nauka i zhizn', 1959, Nr 7, pp 77-78(USSR)

ABSTRACT: The article gives a short description of pleurisy in man, its various kinds, symptoms, and therapy.

ASSOCIATION: Moskovskiy nauchno-issledovatel'skiy institut tuberkuleza Minzdrava RSFSR (Moscow Research Institute of Tuberculosis of the Minzdrav RSFSR)

Card 1/1

AL'TSHULER, N.S., kand.med.nauk; MARGULIS, N.Yu., nauchnyy sotrudnik

Work of a research institute in training personnel. Zdrav.Ros.
Feder. 2 no.4:26-31 Ap '58. (MIRA 11:4)

1. Iz Moskovskogo gosudarstvennogo nauchno-issledovatel'skogo
instituta tuberkuleza Ministerstva zdravookhraneniya RSFSR (dir.
V.F.Chernyshev, zamestitel' direktora po nauchnoy chasti - prof.
D.D.Aseyev).

(MEDICINE--STUDY AND TEACHING)

MARGULIS, N.I.

Unusual tumor in the maxillary sinus of a 2-year-old girl.
Vest. oto-rin. 25 no.2:99 Mr-Ap '63. (MIRA 17:1)

1. Iz otorinolaringologicheskogo otdeleniya Respublikanskoy
detskoy klinicheskoy bol'nitsy, Kishinev.

MARGULIS, N.I.; ROGOL', M.G.

Disinfecting the carriers of pathogenic staphylococci among the medical personnel in pediatric wards. Zdravookhranenie 5 (MIRA 16:1) no.3:47-50 My-Je '62.

1. Is kafedry gospital'noy i fakul'tetskoy pediatrii (zav. - dotsaent P.S.Sosnova) Kishinevskogo meditsinskogo instituta i Detskoy respublikanskoy klinicheskoy bol'nitay (glavnnyy vrach S.S.Strungaru).
(STAPHYLOCOCCAL DISEASE) (DISINFECTION AND DISINFECTANTS)

MARGULIS, N.I.

Treatment of acute suppurative otitis in infants and young children. Zdravookhranenie 2 no.1:48-50 Ja-F '59. (MIRA 12:7)

1. Iz otdeleniya bolezney ukha, gorla i nosa Respublikanskoy detskoj klinicheskoy bol'niцы (glavnyy vrach - N.T. Gordeyeva).
(EAR--DISEASES) (ANTIBIOTICS)

MARGULIS, N. I.

May/Jun 49

USSR/Medicine - Medical Societies
Medicine - Otorhinolaryngology

"Account of the Work of the Moldavian Department, of the All-Union Society of
Otolaryngologists for 1948" 1 p

"Vest Oto-Rino-Laringol" No. 3

"Michurinian Biological Science and Particularly Its Importance in General and
Otolaryngologic Medicine," a report by Prof V. P. Chekurin, chairman of the society, was
the ideological-political highpoint of the activity of this 19-member society. Twelve
reports and 12 demonstrations were given during the year, including three reports by
V. V. Shestakov, G. A. Yegorova, and the chairman on penicillin treatment, and a report
by N. I. Margulis on syphilis of the upper respiratory passages. M. G. Zagorskikh is
secretary of the society.

PA 64/48T81

DRAGANYUK, K.A.; MARGULIS, N.E.; SHINDER, A.L.

Late results of thoracoplasty. Zdravookhranenie v no.3:31-33
My-Je'61.

(MIRA 16:7)

1. Iz Moldavskogo nauchno-issledovatel'skogo instituta tuberkulozesa (direktor kand.med. nauk V.G.Sokol) i Moldavskogo respublikanskogo tuberkul'sinog sanatoriya "Vornichen'" (glavnyy vrach K.A.Draganyuk). (CHEST--SURGERY)

MARGULIS, N. D.

"Physics of Porous Metallic Film Cathodes," by N. D. Margulis,
Institute of Physics, Academy of Sciences Ukrainian SSR, Iz-
vestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 20, No 9,
Sep 56, p 1067 (abbreviated report; full text published in
ZhTF, 26, 536, 1956)

The optimal cathode is described as having an optimal Ba thickness and corresponding to a maximum emission. An experimental determination of Ba and Sr vapor elasticity over the cathode of various porosity is made. To clarify the effect of the residual gases within the tube on the cathode emission, a mass spectroscopic determination of the composition of these gases was carried out. It was found that the poisoning effect of gases substantially affects emission. An analysis of the kinetics of thermochemical interactions of Ba carbonate and its decomposition products with the tungsten sponge of the cathode indicates that such a reaction also occurs on its surface and hence the surface is a metal-semiconducting layer system.

MARQUIS, N.D.

Theory of light interference in absorbing thin films.
N. D. Marquiss (State Univ., Kiel). // Wank Zeffert, Kiel,
Deutsch. Ussz. 1955, J.G. Shaw, vol 14, No. 8, Zberung Fis.
Publ. No. 7, 183-03 (1955). -- Full derivation is presented for
previously (cf. C. A. 41: 328) given equations for reflection
and transmission coeff. of light-absorbing thin layers de-
posited on transparent and opaque bases. [Ludwig Jüttner]

CP

MARGULIS, N. D.

Al	Si	Ge	Sn	Pb	S
Li	Be	Cu	Ag	Bi	As
Mg	Ca	Fe	Co	Te	Se
K	Na	Ni	Cr	W	Ru
Ca	Sc	Mo	V	Ta	Hf

COMMON ELEMENTS

SERIALS INDEX

The Schottke Effect in Complex Semiconducting Cathodes. N. D. Margulis. 10 pages. Battelle translation from *Journal of Experimental and Theoretical Physics (U.S.S.R.)*, v. 16, Nov. 1946, p. 958-964.

Theoretical analysis shows the presence of certain phenomena which are absent in ordinary metallic cathodes. A new formula differing considerably from the well-known Schottke formula is derived for calculation of the total-work function for electronic emission, based on this investigation.

15.6

ASR-SLA METALLURGICAL LITERATURE CLASSIFICATION
EX-2000 CIVILIAN INDUSTRIAL INFORMATION ASSESSMENT CENTER

MARGULIS, Naum Aronovich; POKROVSKAYA, I.M., ved. red.

[Handbook on the supply of coal mines with materials
and equipment] Spravochnik po material'no-tehniches-
komu snabzheniu ugol'noi shakhty. Moskva, Nedra, 1965.
158 p. (MIRA 18:11)

MARGULIS, N.A., ekonomist

Changing the order of supplying mines with equipment for the reproduction of capital assets. Ugol' 38 no.11:55 N '63.

(MIRA 17:9)

1. Tekhnicheskoye snabzheniye tresta Dzerzhinskugol' Donetskogo soveta narodnogo khozyaystva.

MARGULIS, N.A.; SHCHARANSKIY, B.M.

Brief news. Ugol' Ukr. 7 no.10:54-55 O '63. (MIRA 17:4)

1. Nachal'nik otdela tekhnicheskogo snabzheniya tresta
Dzerzhinskugol' (for Margulis). 2. Spetsial'nyy korrespondent
zhurnala Ugol' Ukrayiny (for Shcharanskiy).

MARGULIS, M.S., kand. med. nauk; BERZINA, G.V. [Berzina, G.]

Control of aqueous heparin neutralization by plasma protein
in artificial blood circulation. Vest. khir. '93 no.11:16-24 N 114
(MIRA 18:6)

1. Iz Rizhskogo meditsinskogo instituta (rektor - dotaent V.A.
Korzan).

MARGULIS, M.S.

Vasomotor reactions in artificial blood circulation. Vest. khir.
no.10:128 '64. (MIRA 19:1)

l. Iz Rizhskogo meditsinskogo instituta (rektor - prof. V.A.
Kal'berg).

MARGULIS, M.S.

Hypothermia in artificial blood circulation under experimental
conditions with the use of the AIK apparatus. Eksp.khir.i anest.
6 no.3:20-23 '61. (MIRA 14:10)
(PERFUSION PUMP (HEART)) (HYPOTHERMIA)

MARCULIS, M.S.

Evaluation of the effectiveness of the new model of the artificial blood circulation apparatus in an experiment. Trudy NIIEKHAI no.5:
138-141 '61. (MIRA 15:8)

1. Iz Instituta eksperimental'noy biologii i meditsiny Sibirskogo
otdeleniya AN SSSR.
(PERFUSION PUMP (HEART))

MARGULIS, M.S.

Artificial blood circulation. Vop. pat. i reg. org. krov i dvkh. no.1:
49-62 '61.

Importance of the magnitude of the minute volume in artificial blood
circulation. Ibid.:63-70 (MIRA 18:7)

MARGULIS, M.S.; OSTROVSKIY, V.Yu.

Electroencephalographic observations of artificial circulation
under experimental conditions. Eksper. khir. 5 no.6:42-46 N-D
'60. (MIRA 14:2)

(BLOOD—CIRCULATION, ARTIFICIAL) (ELECTROENCEPHALOGRAPHY)

MARGULIS, M.S.

Effectiveness of extracorporeal blood circulation under experimental
conditions using various forms of artificial circulation. Eksper.
khir. 5 no. 2:12-18 Mr-Ap '60. (MIRA 14:1)
(PERFUSION PUMP (HEART))

MARGULIS, M.S.

Optimal artificial blood flow in extracorporeal circulation;
survey of the literature. Eksper.khir. 4 no.4:58-60 J1-Ag
'59. (MIEA 12:11)

1. Iz laboratorii iskusstvennogo krovobrashcheniya (zav. -
doktor med.nauk S.S.Bryukhonenko) Instituta eksperimental'noy
biologii i meditsiny (dir. - prof.Ye.N.Meshalkin) Sibirskogo
otdeleniya AN SSSR.
(HEART, MECHANICAL)

MARGULIS, Mikhail Semenovich

[Acute disseminated encephalomyelitis and multiple sclerosis]
Ostryi rasseiannyi entsefalomielit i mnozhestvennyi skleroz.
Moskva, Medgiz, 1959. 285 p. (MIRA 13:12)
(ENCEPHALOMYELITIS) (MULTIPLE SCLEROSIS)

MARGULIS, M. S., Cand of Med Sci -- (diss) "Artificial atelectase formed through the operation of tying-off bronchi, and its influence on normal tubercular lung tissue (experimental and clinical investigation)." Moscow, 1957, 18 pp (Academy of Medical Sciences USSR), 250 copies
(KL, 33-57, 89)

5904

CONT.

atelectasis of the lung with complete obliteration of the lumen of the bronchus was achieved. Six months after the operation the volume of the atelectatic lung was reduced to 20% of the normal. Rabbits, seriously ill from acute haematogenous miliary tb stood the operation quite well. The shrivelling of the corresponding lung portion surpassed in speed and intensity any shrinkage caused by collapse therapy. Ligature of the bronchus did not in the experiment stop the development of generalized disseminated tb, but arrested its progress in the corresponding part of the lung. Bronchus ligation was performed in 16 patients at the institute for tb with satisfactory results. References 13.

Mishura - Leningrad (IX, 15)

EXCERPTA MEDICA Sec.9 Vol.11/11 Surgery Nov 57
MARGULIS M.S.

5904. MARGULIS M.S., Clin. of Pulmon. Surg., Inst. for Tuberc., Acad. of Med. Sci., Moscow. "The effect of ligature of the bronchus upon lung tissue in a normal person and in a case of tb (Russian text) EKSPER. KHIR. 1956, 2 (13-16) Illus. 4
In 38 experiments on rabbits, the author studied the possibility of bronchus ligation and the expediency of its application in the treatment of pulmonary tb. The method of the experiments is described in detail. In all animals operated upon, a lasting

Marmulis, M. M.

"Certain Problems of the Pressureless and Pressure Plane Motion of Ground Waters
in a Uniform Medium." Thesis for Degree of Cand. Technical Sci. Sub 15 Feb 49,
All-Union Sci Res Inst of Water Supply, Sewage, Hydraulic Engineering Structures,
and Engineering Hydrogeology (VODGEO)

Summary 82, 18 Dec 52, Dissertations Presented for Degrees in Science and
Engineering in Moscow in 1949. From Vechernaya Moskva, Jan-Dec 1949.

MARGULIS, M. L.

"Experimental Investigation of a Vibrating Pulverizer." Sub 10 Jan 52,
Moscow Inst of Chemical Machine Building

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SO: Sum. No. 480, 9 May 52

SUVOROVA, V.P.; MARGULIS, M.G.; TRUBITSYN, N.D.

Chemical cleaning of unhaired hides with phosphate salts. Leg.
prom. 16 no.1:26-27 Ja '56. (MIRA 9:6)
(Hides and skins)

L 6886-65

ACCESSION NR: AP4044622

SUBMITTED: 02Mar64

ENCL: 00

SUB CODE: GP, OC

NR REF SQV: 003

OTHER: 001

Card 3/3

L 6886-65

ACCESSION NR: AP4044622

observed because the resultant fumaric acid has a much lower solubility in an aqueous medium than maleic acid. In these experiments, the conversion of maleic acid into fumaric acid was produced not by ultraviolet irradiation with bromine as a catalyst, but by application of an ultrasonic field (20, 600, and 840 kcs, and 1 and 2.5 Mcs) and that the reaction can be effected in darkness if the aqueous solution of the maleic acid is saturated with argon, helium, hydrogen, or nitrogen. The amount of produced fumaric acid depended on the nature of the saturating gas. An explanation is proposed for the mechanism of the chain reaction in the ultrasonic field, and it is suggested that the excitation of the bromine atoms, initiating the investigated reaction, occurs in a cavitation void. Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: Institut biofiziki AN SSSR, Moscow (Institute of Biophysics AN SSSR)

Card - 2/3

I. 6886465 IWT(m)/EFF(c)/EPR/ENP(j)/ENP(q)/ENP(b) Pe-4/Pr-4/Ps-4/Pa-4 IJP(c)/
RPL JD/WN/RM 8/0046/64/010/0G3/0370/0372
ACCESSION NR: AP4044622 69

AUTHORS: Margulis, M. A.; Sokol'skaya, A. V.; El'piner, I. Ye. 68

TITLE: Chain reaction sensitized by bromine and induced by ultra-sound waves 67

SOURCE: Akusticheskiy zhurnal, v. 10, no. 3, 1964, 370-372

TOPIC TAGS: ultrasound irradiation, chain reaction, maleic acid, fumaric acid, ethylene

ABSTRACT: It is shown that under the influence of ultrasonic waves it is possible to induce reactions that are characterized by a large quantum yield and a high percentage of chemical transformation of the initial material. This applies to the process of stereoisomerization of compounds of the ethylene series (ethylene-1, 2-dicarboxylic acid), induced by ultrasonic waves. The conversion of maleic into fumaric acid, induced by ultrasonic waves, can be easily

Card 1/3

MARGULIS, M.A.

We are increasing the quality of the wire broadcasting systems.
Vest. sviazi 21 no.5:17-19 My '61. (MIRA 14:6)

1. Glavnnyy inzhener Kiyevskoy direktsii radiotranslyatsionnykh
setey.
(Kiev Province--Wire broadcasting)

MARGULIS, M.A.

BULYGIN, I.V.; MARGULIS, M.A.

We shall provide full radio service in twelve districts of
Kiev Province. Vest. sviazi 17 no.5:22 Ky '57. (MLRA 10:5)

1. Glavnyy inzhener Kiyevskogo oblastnogo upravleniya svyazi.
(for Bulygin). 2. Glavnyy inzhener Kiyevskoy direktsii radio-
translyatsionnykh setey (for Margulis).
(Kiev Province--Radio)

MARGULIS, M.

107-57-6-4/57

AUTHOR: Margulis, M., Chief Engineer of DRTS (Kiyev)

TITLE: Rural Radio Men Prepare to the 40th Anniversary
(Sel'skiye radiofikatory k 40-oy godovshchine)

PERIODICAL: Radio, 1957, Nr 6, p 4 (USSR)

ABSTRACT: About 250,000 wired loudspeakers, radio receivers, and tv sets are in operation in rayons and villages of the Kiyev oblast. 160 high-power wire-broadcast stations have been built recently. Communication men of the Kiyev oblast pledged to complete wire-broadcast networks in 20 rayons of the oblast. As the oblast is within the primary service area of VHF FM stations, the local wire-broadcast outfits ("radiouzly") are tuned in those stations. "Estoniya" type radio-phonograph combinations and tv sets having VHF FM are widely used at the wire-broadcast outfits.

AVAILABLE: Library of Congress

Card 1/1

MARGULIS, M.A.

Mobile radio repair shop. Vest.sviazi 16 no.10:30 0 '56.
(MIRA 10:10)

1. Glavnnyy inzhener Kiyevskoy oblastnoy Direktsii radio-
translyatsionnykh setey.
(Radio--Repairing)

MARGULIS,M.A.; REZNIK,A. I.

Our experience in providing radio service for the rural areas.
Vest.sviaz 15 no.8:21-22 Ag'55. (MLP 8:12)

1. Starshiy inzhener Kiyevskoy Direktori radiotranslyatsionnykh
setey (for Margulis) 2. Glavnyy inzhener SMUR (for Reznik)

Margulis, M. A.

USSR/Miscellaneous

Card 1/1 Pub. 133 - 17/19

Authors : Margulis, M. A.

Title : Brochure on an experiment in establishing radio communication facilities
in villages

Periodical : Vest. svyazi 6, page 30, June 1955

Abstract : A review is presented of Kitov's and Petrov's brochure dealing in an experiment in establishing radio communication facilities in villages. The absence of detailed information and instruction on establishment of radio points and maintenance of equipment is criticized, and a request is made that the future publication of this type follow more closely the instruction issued by the Ministry for Communications.

Institution :

Submitted :

MARGULIS, M. A.

USSR/Miscellaneous - Radiofication

Card 1/1 Pub. 133 - 14/23

Authors : Meshcherin, M. A., Director of the KIEV Radio-Relay Network; and
Margulis, M. A., Chief Engineer

Title : The concrete solution of the problem of overall radiofication of rural localities

Periodical : Vest. svyazi ll, 22-23, Nov 1954

Abstract : The work on radiofication of the various rural districts of the KIEV region since 1952 is reviewed and information is given on the works planned and equipment required for completing the radiofication of all the KIEV-region villages. The plan calls for the installation of 33 radio-centers, 20,000 kilometers of wire-lines, 90,000 radio-sets, and 240,000 radio-output points (speakers). A number of replacement and spare parts required is also listed. Illustrations.

Institution:

Submitted:

1. MELSHCHERIN, G.; MARGULIS, M.
2. USSR (600)
4. Radio - Stations
7. Organization for the prevention of breakdowns at radio-stations. Sov. sviaz.
3, No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

MARGULIS M.

238T52

USSR/Electronics - Wired Radio

Apr 52

"For Organized and High-Quality Operation (From the Experience of the Kiev Oblast Administration of Wired Radio Networks)," G. Meshcherin and M. Margulis

"Radio" No 4, pp 3-4

Notes achievements brought about by Kiev DRTS by proper organization of tech exploitation of wired radio centers, education of workers, introduction of efficiency suggestions, etc. The yearly 1951 plan for the installation of loudspeakers was fulfilled by more than 20%.

238T52

MARGUL'S, M.A.; GAL'TSOV, V.Ya., kand.tekhn.nauk

Intensifying some stages of the manufacture of polyolefins. Khim.
prom. no.12:837-839 D '61. (MIRA 15:1)
(Olefins)

Intensification of some stages...

S/064/61/000/012/001/002
B103/B110

Fig. 1. Crushing apparatus. Legend: (1) partition wall; (2) stationary and (5) adjustable vibrators; (3) and (4) radiating plates; (6) piezoelectric pickup. Apparatus is tilted by 12° to facilitate removal of cavitation bubbles from radiating plates.

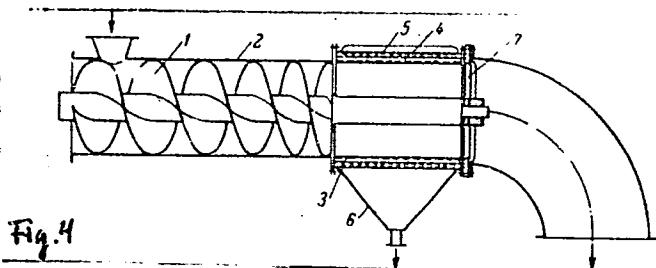


Fig. 4

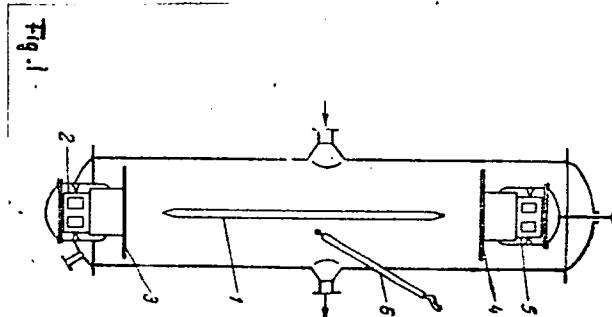
Fig. 4. Screw press. Legend: (1) double screw; (2) cylinder; (3) metal fabric; (4) screen; (5) filter drum; (6) collector for liquid; (7) exchangeable partition wall.

Card 3/3

S/064/61/000/012/001/002
B103/B110

Intensification of some stages...

for continuous rinsing of the polymer, and pressing off to a 15% moisture content reduces the ash content in the polymer to 0.042 during a single rinsing (modulus of dissolution = 6). An alcohol addition of 5% of the total reaction mass is sufficient. Drying may be reduced to 0.18 through low moisture of the polymer. Polymers with an ash content of <0.1% can be produced by this method. K. S. Minker and E. G. Ruter are mentioned. There are 4 figures and 5 references: 4 Soviet and 1 non-Soviet.



Card 2/3

S/064/61/000/012/001/002
B103/B110

AUTHORS: Margulis, M. . . , Gal'tsov, V. Ya, Candidate of Technical Sciences

TITLE: Intensification of some stages of polyolefin production

PERIODICAL: Khimicheskaya promyshlennost', no. 12, 1961, 15 - 17

TEXT: A description is given of: (a) the ultrasonic crushing of stereospecific $\text{Al}(\text{C}_2\text{H}_5)_3/\text{TiCl}_3$ catalysts dissolved in saturated hydrocarbons (Fig. 1); (b) extraction of the catalysts from the polymer with the same apparatus but without partition wall; and (c) a press for pressing off the polymer (Fig. 4). The catalyst was extracted from polypropylene by means of oscillations of 21.3 kc/sec at 30°C or of 1 Mc/sec and an intensity of 5 w/cm^2 at 40°C . Extraction was found to be accelerated as the sound intensity increased. 30 - 45 min is sufficient for purification. A residual content of solvent (heptane-alcohol mixture) of 15% and less in the polymer can be reached with a screw-press. Application of ultrasonics

Card 1/3

MARGULIS, L.I., inzh.; BEI'MAN, B.M., inzh.

IU.G. Gevner's mixed brigade of assemblers and fitters. Mont. i
spets. rab. v stroi. 26 no.8:10-12 Ag '64.

(MIRA 17:11)

1. Nauchno-issledovatel'skaya stantsiya No.6 Gosudarstvennogo tresta
po montazhu metallurgicheskogo oborudovaniya v vostochnykh rayonakh.

MARGULIS, L.I., inzh.; BEL'MAN, B.M., inzh.

I.M. Ponomarev's crew of communist labor. Mont. i spets. rab.
(MIRA 16:7)
v stroi. 25 no.5:12-15 My '63.

1. Normativno-issledovatel'skaya stantsiya No.6 pri Gosudarstven-
nom treste po montazhu metallurgicheskogo oborudovaniya v
vostochnykh rayonakh.
(Bus conductors (Electricity))

MARGULIS, L.I., inzh.; GAVRISHCHUK, I.I.; HEL'MAN, B.M.

Experience of V.A. Sviderskii's brigade of communist labor.
Mont. i spets. rab. v stroi. 24 no.2:11-13 F '62. (MIRA 15:6)

1. NIS-6 Gosudarstvennogo tresta po montazhu metallurgicheskogo
oborudovaniya v vostochnykh rayonakh.
(Machinery--Construction)

MARGULIS, L.I.; GANSKIY, V.A.; GOBERMAN, M.D., otv.red.; PEVZNER, A.S.,
zav.red.izd-va; OSENKO, L.M., tekhn.red.

[Uniform time and pay standards for construction, assembly, and
repair operations in 1960] Edinyye normy i rastsenki na stroi-
tel'nye, montazhnye i remontno-stroitel'nye raboty, 1960 g.
Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materia-
lam. Sbornik 33. [Assembling the equipment for metallurgical
plants] Montazh metallurgicheskogo oborudovaniia. No.1. [Equipment
for blast-furnace plants] Oborudovanie domennykh tsekhov. 1960.
63 p.
(MIRA 13:6)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroi-
tel'stva. 2. TSentral'noye normativno-issledovatel'skoye byuro
Ministerstva stroitel'stva RSFSR (for Margulis, Ganskiy).
(Wages) (Blast furnaces)

BRAYNINA, R.A.; MARGULIS, L.A.; KOVALEVSKAYA, I.I.; CHERNYSHEVA, N.A.;
PUTRIN, N.G.

Specific prevention of typhoid fever in areas with increased
morbidity. Zhur. mikrobiol., epid. i immun. 42 no.7:65-68
Jl '65. (MIRA 18:11)

1. Moskovskiy institut epidemiologii i mikrobiologii i
Ministerstvo zdravookhraneniya Kabardino-Balkarskoy ASSR.

FERDINAND, Ya.M. (Rostov-na-Donu); Prinimali uchastiye; MARISOVA, A.P.;
BRAYNINA, R.A.; MARGULIS, L.A.; MYASNIKO, A.M.; KOVALEVSKAYA,
I.L.; TELESHEVSKAYA, E.A.; SOBOLEVA, S.V.; KALININA, K.I.;
KOVALEVA, N.S.; IVANOVA, M.K.; ARENDER, B.A.; KUCHERENKO, R.A.;
MANATSKOVA, K.S.; OLEYNIKOVA, L.T.; KIBARDINA, Yu.A.;
GRIGOR'YEVA, K.S.; SEMENIKHINA, L.G.; CHERNYKH E.I.; DOROFEYeva,
V.M.; SHEVCHENKO, Ye.N.; ABRAMOVA, O.K.; SKUL'SKAYA, S.D.;
PETROVA, Z.I.; MAKHLINOVSKIY, L.I.; KUZ'MINA, A.I.; AL'TMAN, R.Sh.;
MARDEERER, R.G.; YENGALYCHEVSKAYA, L.N.; CHIRKOVA, M.N.; TERESHCHENKO,
N.I.; SHELKOVNIKOVA, M.A.; PROKOPENKO, V.V.; BEKLEMESHEVA, Ye.Q.;
BARANOVA, T.V.

Effectiveness of specific prophylaxis with alcohol divaccine
against typhoid and paratyphoid B fever in school-age children.
Zhur. mikrobiol., epid. i immun. 41 no.1:23-27 Ja '64.

(MIRA 18:2)

BRAYNINA, R.A.; MARGULIS, L.A.; KOVALEVSKAYA, I.L.; MITEREVA, V.G.; FERDINAND, Ya.M.; PUTRIN, N.G.; PAVLENKO, I.P.; TUPIKINA, V.A.; UDAVICHENKO, V.Ya.; KOBYZEVA, O.V.

Epidemiological effectiveness of dried alcoholic divaccine, enriched and nonenriched with Vi-antigens in school-age children and of Vi-antigens in preschool-age children in a typhoid fever outbreak. Zhur. mikrobiol., epid.i immun. 40 no.12:18-22 D '63.

(MIRA 17:12)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta epidemiologii i mikrobiologii.

MARGULIS, L.A., kand.med.nauk; BRAYNINA, R.A.

Prospects for decreasing the incidence of abdominal typhus
and paratyphoid in the R.S.F.S.R. Fel'd. i akush. 28 no.6
Je '63. (MIRA 16:8)

1. Iz Moskovskogo nauchno-issledovatel'skogo instita epidemiologii i mikrobiologii Ministerstva zdravookhraneniya RSFSR.
(TYPHOID FEVER—PREVENTIVE INOCULATION)
(PARATYPHOID FEVER—PREVENTIVE INOCULATION)

FERDINAND, Ya.M.; MARGULIS, L.A.; BRAYNINA, R.A.; DMITRIYEVA-
RAVIKOVICH, Ye.M.; KOVALEVSKAYA, I.L.; MYASNENKO, A.M.;
IVANOVA, L.M.; TELESHEVSKAYA, E.A.; MARISOVA, A.P.;
KOVALEVA, N.S.

Methodology of studying the epidemiological effectiveness
of intestinal vaccines. Zhur. mikrobiol., epid. i immun.
33 no.11:17-22 N '62. (MIRA 17:1)

1. Iz Rostovskogo i Moskovskogo institutov epidemiologii
Ministerstva zdravookhraneniya RSFSR i Moskovskoy gorodskoy
sanitarno-epidemiologicheskoy stantsii.

MARCOLIS, Kh.Sh.

Motions in symmetric Riemannian spaces of the first class. Izv.
vys.ucheb.zav.; mat. no.2:100-109 '62. (MIRA 15:8)

1. Kazanskiy gosudarstvennyy universitet imeni V.I.Ulyanova-Lenina.
(Spaces, Generalized) (Motion)

KHENTOV, R.A.; MARGULIS, I.Ya.

Labor following mitral commissurotomy. Akush. i gin. 38 no.5:
96-97 S-0 '62. (MIRA 17:11)

1. Iz Rodil'nogo doma No.2 (glavnnyy vrach V.A. Chernopyatov),
Moskva.

KHENTOV, R.A.; MARGULIS, I.Ya.

Management of labor in organic heart diseases. Vop. okh. mat.
(MIRA 15:6)
i det. 7 no.5:85-87 My '62.

1. Iz rodil'nogo doma No.2 Moskvy (glavnyy vrach V.A.
Chernopyatov).
(LABOR OBSTETRICS) (HEART--DISEASES)

KOZHUSHKO, M.I., mayor meditsinskoy sluzhby; KOZAR', M.I., kapitan
meditsinskoy sluzhby; MARGULIS, I.L.

Diagnosis of bacillary dysentery by means of fluorescing gamma
globulin. Voen.-med. zhur. no.9:57-59 S '61. (MIRA 15:10)
(DYSENTERY—DIAGNOSIS) (GAMMA GLOBULIN)

ZELENSKIY, G.G., kand.sel'skokhoz.nauk; KARAVAYEV, K.G.; LEBEL', L.D., kand.sel'skokhoz.nauk; MARGULIS, I.A.

New Soviet breed of wool goats, Zhivotnovodstvo 24 no.9:67-70 S '62.
(MIRA 15:12)

1. Direktor Leninabadskoy stantsii po iskusstvennomu osemeniyu sel'skokhozyystvennykh zhivotnykh (for Karayev). 2. Direktor Leninabadskogo gosucarstvennogo plemennogo rassadnika koz (for Margulis).

(Soviet Central Asia—Goat breeds)

USSR/Farm Animals. Sheep and Goats.

Q

Abs Jcur: Ref Zhur-Biol., No 17, 1958, 78756.

Author : Margulis, I. A.

Inst :

Title : Preliminary Results of Breeding of Fat-Rumped
Sheep Dzhaydar with Fine-Wool Rams of Soviet Merino.

Orig Pub: Khochagii kishloki Tochikiston, 1957, No 9, 15-22;
S. kh. Tadzhikistana, 1957, No 9, 15-21.

Abstract: In the kolkhozes of Northern Tadzhikistan, fat-
rumped sheep Dzhaydar were crossed with fine-wool
rams of Soviet merinos brought in from Stavropol
Kray. The productivity of young stock was studied
at weaning and as yearlings. At this age, 40% of
the animals had wool of a white color, 45% had

Card : 1/2

MARGULIS, G.Ya.

Bending shaped metal on a pipe-bending unit. Mont. i spets.
rab. v s'roi. 24 no.8:9-11 Ag '62. (MIRA 15:8)

1. Nizhne-Tagil'skoye montazhnoye upravleniye Gosudarstvennogo
tresta po montazhu metallurgicheskogo oborudovaniya v vostochnykh
rayonakh. (Bending machines)

MARGULIS, G.M., kand.meditinskikh nauk; BROMANSKAYA, M.I.

Organization of sanitary and epidemiological work under new conditions.
Gig. i san. 25 no.4:78-81 Ap '60. (MIRA 13:8)

1. Iz kafedry organizatsii zdravookhraneniya Tashkentskogo meditsinskogo
instituta i lechebno-sanitarnogo ob"yedineniya Ordzhonikidzevskogo
rayona Tashkentskoy oblasti.

(PUBLIC HEALTH)

MARGULIS, G., inzh.-polkovnik

Rapidly and accurately. Starsh.-serzh no.6:22 Je '61.
(MIRA 14:10)
(Tank warfare)

MARGULIS, F.B.

Complete intrahepatic position of the gallbladder. Zdrav.
Tadzh. 10 no.3:24 '63. (MIRA 17:4)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - zasluzhennyj
deyatel' nauki dotsent Z.P. Khodzhayev) Tadzhikskogo meditsinskogo
instituta imeni Abuali ibni Sino.

MARGULIS, F.B.

Rare case of a lesion of the rectum with a wound of the organs of
the abdominal cavity. Zdrav.Tadzh. 9 no.4:43 Jl-Ag '62.
(MIRA 15:11)

1. Iz kafedry fakul'tetskoy khirugii (zaveduyushchiy - zasluzhennyy
deyatel'nauki Z.P.Khodzhayev) Tadzhikskogo meditsinskogo instituta
im. Abuali ibni Sino.

(RECTUM—WOUNDS AND INJURIES)
(ABDOMEN—WOUNDS AND INJURIES)

MARGULIS, F. B., Cand Med Sci -- "Intra~~sseous~~ ^{medullary nailing} ~~osteosynthesis~~ ^{gunshot} ^(of the hip) ~~of~~ ^{means of a} ~~fractures~~ by the application ^{blowout} ^{of primary dead-end suture} (experimental study)." Samarkand, 1961. (Samarkand State Med Inst im I. P. Pavlov) (KL, 8-61, 262)

- 489 -

MARGULIS, F.B.

Intrafossaeous metallic osteosynthesis of gunshot fractures of the hip joint with use of primary tight suture. Zdrav. Tadzh. 7 no. 3:54-58 Ky-Je '60. (MIRA 14:4)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - zasluzhennyy deyatel' nayki, prof. Kh.D. Gadzhiev) Stalinabadskogo meditsinskogo instituta imeni Abuali ibni Sino.
(HIP JOINT---FRACTURE)

YAMPOL'SKAYA, M.M.; MARGULIS, E.L.; GORODINSKAYA, V.Ya.

Preparation of infusions in galenic laboratories by a modified percolation method and the utilization of waste alcohol. Apt.dalo 5 no.2:38-40 Mr-Ap '56. (MLRA 9:7)

1. Iz TSentral'noy nauchno-issledovatel'skoy aptechnoy laboratorii (direktor M.N.Bushkova) Glavnogo aptechnogo upravleniya Ministerstva zdravookhraneniya USSR.

(EXTRACTS) (ETHYL ALCOHOL)

MARGULIS, David Konstantinovich; SVET, Ye.B., red.

[High-efficiency broaching] Vysokoproizvoditel'noe pro-
tiagivanie. Cheliabinsk, Ural'skoe knizhnoe izd-
vo, 1965. 108 p. (MIRA 18:10)

MARGULIS, David Konstantinovich; GORELOV, V.M., inzh., red.;
DUGINA, N.A., tekhn. red.

[Broaches with varying cutting teeth] Protiazhki peremennogo
rezania. Izd.2., perer. i dop. Moskva, Mashgiz, 1962. 268 p.
(MIRA 15:5)
(Broaching machines)

MARGULIS, D.K., kand.tekhn.nauk

Determining the efficient feed intensity in relation to the
strength of broaches in internal broaching. Vest.mash. 40
no.9:57-62 S '60. (MIRA 13:9)
(Broaching machines)

S/121/60/000/012/006/015
A004/A001

The Part Played by Built-Up Edge During Broaching at Low Feeds

Figure 5:

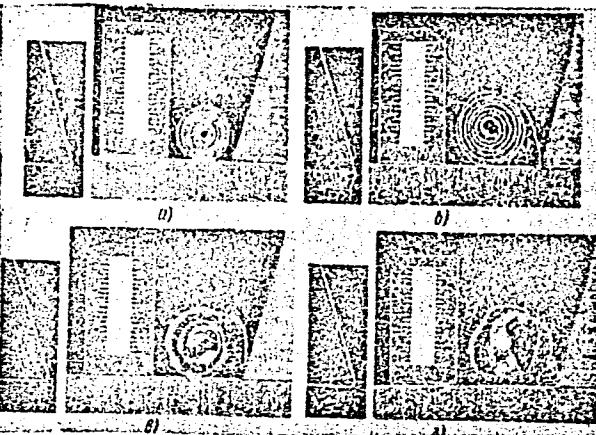


Figure 5:

Cutting the chip at a feed per tooth of $s_z = 2\mu$ at different rounding-off radii ρ of the cutting edge of the broach:
a - sharp tooth, $\rho < 2\mu$, $l = 27$ mm;
 δ (b) - $\rho \approx 10\mu$, $l = 26$ mm; δ (v) -
 $\rho \approx 20\mu$, $l = 24$ mm; δ (g) - $\rho \approx 30\mu$,
 $l = 24$ mm. Photos of the luminous cross sections of the teeth are shown on the left, magnified by 15 diameters. There are 10 figures and 1 reference.

Card 5/5

S/121/60/000/012/006/015
A004/A001

The Part Played by Built-Up Edge During Broaching at Low Feeds

Figure 4:

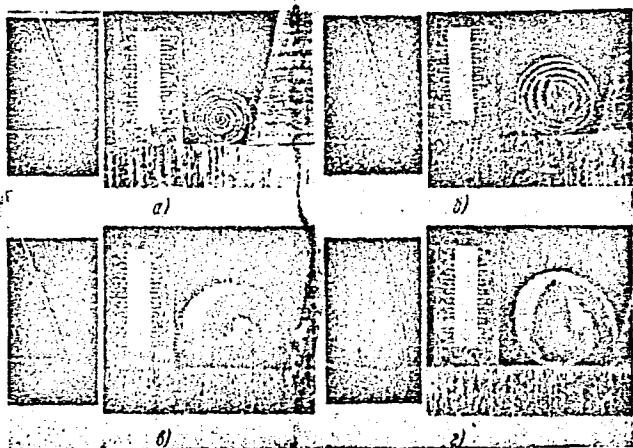


Figure 4:

Cutting the chip at a feed per tooth of $s_z = 6\mu$ and at different rounding-off radii ρ of the cutting edge of the broach:

a - sharp tooth, $\rho < 2\mu$, length of cut $l = 27$ mm; b - $\rho \approx 27\mu$, $l = 26$ mm; v - $\rho \approx 60\mu$, $l = 19.5$ mm; g - $\rho \approx 80\mu$, $l = 20$ mm. Photos of the luminous cross sections of the teeth are shown on the left, magnified by 15 diameters.

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S/121/60/000/012/006/015
A004/A001

The Part Played by Built-Up Edge During Broaching at Low Feeds

edge and the very small rounding-off radius of its nose play the part of a cutting blade which explains the possibility of cutting at such an unfavorable ratio between the magnitude of rounding-off radius of the cutting edge and feed. Obviously, cutting is ensured by the presence of a braked zone which is converted into built-up edge. The chip thickness within the range of one whorl fluctuates heavily. This is obviously the explanation for the straggling of the axial force magnitudes during the broaching at low feeds (up to 0.03 mm). During the destruction and new formation of built-up edge in the course of the cutting process the actual front angle varies within a wide range. The variations of this angle are particularly considerable during the operation of teeth with a blunt blade, in which case the front angle may vary within the values of +25 to -75°.

Card 3/5

S/121/60/000/012/006/015
A004/A001

The Part Played by Built-Up Edge During Broaching at Low Feeds

undergoing heat treatment to obtain different degrees of hardness. Broaching was taking place without cooling, mainly at low cutting speeds of $v = 0.56 \text{ m/min}$. The broaches used during the tests were of the high-speed steel P18 (R18) grade, subjected to standard heat treatment, with a hardness of RC 62-63. After preliminary grinding and sharpening, the broaches were subjected to artificial aging, which ensured the absence of deformations during the finishing grinding and sharpening operations. The broaches were tooled with finely grained abrasive wheels of 80 grain size and lapped on the back edges. The rake angle of the broach teeth $\beta = 15^\circ \pm 1^\circ$, the back angle $\alpha = 3^\circ \pm 15'$. The length of the cutting blade (width of the working part of the broach) amounted to 15 mm. The lead of the teeth was 3-5-7-10 μ with a tolerance of -1 μ . The cutting process during the broaching at microfeeds per tooth proceeds steadily both with a keen blade ($\rho \approx 2-3\mu$) and a blunt blade, when the rounding-off radius exceeds the feed value by 10 times and more. Figures 4 and 5 show the successive deterioration of the whorl forming of the chip as the rounding-off radius of the cutting edge increases. The 45Kh grade steel of HB 179-195 hardness was broached at $v = 0.56 \text{ m/min}$ without cooling. Investigations of the chips proved that the hardness of the built-up

Card 2/5

S/121/60/000/012/006/015
A004/A001

AUTHOR: Margulis, D. K.

TITLE: The Part Played by Built-Up Edge During Broaching at Low Feeds

PERIODICAL: Stanki i Instrument, 1960, No. 12, pp. 14-18

TEXT: The practice of using broaches of alternate cutting at the Chelyabinskij traktornyj zavod (Chelyabinsk Tractor Plant) showed that the highest surface finish and the highest dimensional stability can be obtained with broaches whose feed on the finishing teeth does not exceed 5 per tooth on the side. It was found that the high-quality finish of the front and back edges of the teeth working at microfeed speeds ensures a good stability of the broaching process, while the cutting speeds should not exceed 5 m/min. In order to elucidate the phenomena taking place during the broaching process at microfeeds, i. e. up to 10μ , the unrestricted cutting process by flat broaches was investigated with the aid of photo and film shots. Specimens of 10 x 30 x 250 mm of rectangular cross section, ground on all sides, were subjected to tests in a special fixture with a window, through which the whole process could be filmed. The specimens were made of the steel grades 45X (45Kh), 45, 20, 18XHBA (18KhNVA) and others, some of them were ✓ —

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IGNATOV, Aleksey Vasil'yevich; MARGULIS, D.K., kand.tekhn.nauk, red.;
SVET, Ye.B., red.; VYGOLOVA, M.A., tekhn.red.

[Thread and its quality; technological handbook for machine-tool
operators and inspectors] Raz'ba i ee kachestvo; tekhnologii-
cheskaya paniatka stanochnika i kontrolera. Pod red. D.K.Margu-
lisa. Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1958. 127 p.
(MIRA 13:9)

(Screw threads)

Cutting force and tool life relations in high speed drilling
of cast iron. (Cont.)

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change from 1.02 to 1.6 and from 1.02 to 2.0, respectively.
The hardness changes the factors from 0.58 at 130 Brinell to
1.34 at 250 Brinell for the axial force and from 0.83 at 130
Brinell to 1.15 at 250 Brinell for the torque. Tool life tests
were carried out assuming the bluntness criterion to be 0.2 mm
wear at the rear cutting edge. In high speed drilling, when
the removal of heat is a major factor, the effect of drill
diameter on tool life is greater than in ordinary drilling
because the compensating effects of greater stiffness and less
vibrations are absent. Tool lives are plotted in double log-
arithmic graphs against diameter, rate of feed and cutting
speed. The cutting speed is 34.2 times the 0.45 power of the
diameter divided by the 0.2 power of the tool life and the 0.3
power of the rate of speed. It is inversely proportional to
the 0.7 power of the hardness of the machined material. There
are 3 Slavic references, 18 figures, including 13 graphs.

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AVAILABLE:

Cutting force and tool life relations in high speed drilling
of cast iron. (Cont.)

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is proportional to the 2.2 power of the drill diameter. The
exponents with which the rate of feed enters into the force
formula vary between 0.7 and 0.9 when the cutting speed changes
from 5 to 60 m/min; the same variation in the torque formula
is 0.76 to 0.8 in the range of speeds between 60 and 90 m/min.
The proportionality factors in metric units are 35 for the
axial force and 0.01 for the torque. These are considerably
below the standard relationships recommended by ENIMS. The
effect of thinning out the drill web was examined. It is
pointed out that the thinning out type of sharpening in carbide-
tipped drills leads to the formation of a large negative front
clearance angle (up to minus 18°). It was found that contrary
to the effect of thinning out in high speed steel drills, where
positive front clearance angles are preserved, in carbide-
tipped drills thinning out actually increases the axial effort
over the whole range of cutting speeds. The effect of the
cutting speed on the axial force shows a characteristic dip
around 40 m/min. The effect is negligible between about 80
and 160 m/min. The effect of wear on the rear cutting edge
upon the axial force and torque coefficients is given in a
table; for amounts of wear between 0.1 and 0.7 mm the factors

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MARGULIS, D.K.

122-4-8/29

AUTHOR: Margulis, D.K., Candidate of Technical Sciences and
Kholmogortsev, Yu.P., Engineer.

TITLE: Cutting force and tool life relations in high speed
drilling of cast iron. (Silovye i stoykostnye zavisimosti
pri skorostnom sverlenii chuguna.)

PERIODICAL: "Vestnik Mashinostroeniya" (Engineering Journal), 1957,
No.4, pp. 41 - 47 (U.S.S.R.)

ABSTRACT: The tests were carried out by the cutting laboratory of
the Chelyabinsk Tractor Plant (Chelyabinskij Traktorniy Zavod)
with carbide-tipped twist drills. BK8 carbide tips were copper
brazed in a barium chloride bath simultaneously heating the
shank for quenching. A vertical drilling machine, model 2A150
(made by the plant "Imeni Lenina" of Sterlitamak) was modern-
ised to obtain 48 speed steps up to 3 200 r.p.m. and 18 feed
steps between 0.1 and 2.64 mm/rev. The drill point was ground
to an angle of 118° with a front clearance angle of 16°. The
tests were carried out on grey cast iron, G421-40 of 180-200
Brinell hardness. Experimental curves are given (straight
lines) in double logarithmic presentation plotting the axial
force, the torque and the power against the rate of feed per
revolution at different cutting speeds. The axial force is
proportional to the 1.2 power of the drill diameter. The axial
force and power are also plotted against the drill dia. The torque

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Alternate Cutting Pull Broaches (Cont.)

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design, 2) permit broaching in a single pass in many instances, and 3) give better surface quality. Data and formulae supplied by the VNII (All-Union Scientific Research Institute for Tools) and the Gor'kiy Automobile Plant are mentioned. The abbreviated calculation scheme for alternate cutting broaches was developed by the author and A. A. Zalesov; The full calculation scheme by the author, V. M. Golovanov, and O. M. Khrenova. There are 11 references, all of them USSR.

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